

SPECIFICATION

Engineering Plastic Cardboard

FIELD OF THE INVENTION

The present invention relates to an engineering plastic cardboard.

BACKGROUND OF THE INVENTION

Up to now, cardboard made of paper has been used for many purposes such as a casing material for packing, shock absorbing material to reduce impact, sound absorbing member to soundproof and the like, and many kinds of paper cardboard have been provided thus far.

Further, a plastic cardboard made of a thermoplastic resin, such as polypropylene, polyvinylchloride or the like has been also provided. Cardboard made of paper is light but difficult to mold into shapes having a curved face, so that there is a problem in that the use of said cardboard is limited.

Further, said plastic cardboard, made of thermoplastic resin, has good moldability, but poor heat resistance, so that there is a problem in that said plastic cardboard can not be used under high temperatures.

The object of the present invention is to provide a cardboard having a good heat resistance and moldability.

DISCLOSURE OF THE INVENTION

To solve said problems the present invention provides an engineering plastic cardboard, consisting of a core member and covering member(s) covering one or both side(s) of said core member, wherein at least said core member is made of crystalline polyester, stereoregular polyethylene, a polymer alloy of engineering plastic and thermoplastic resin, or a polymer alloy of said engineering plastic, said thermoplastic resin, and a rubber-like material, said engineering plastic being of one or more kinds(s) of engineering plastic(s) selected from a group of polyamide(PA), polyester(PE), polyacetal(POM), polycarbonate(PC), polyethylene terephthalate(PET), polybutylene terephthalate(PBT), polysulfone(PSF), polyethersulfone(PES), polyphenylene ether(PPE), modified polyphenylene ether(Modified PPE), polyphenylene sulfide(PPS), polyarylate(PAR), polyether-etherketone(PEEK),

polyamideimide(PAI), polyimide(PI), polyetherimide(PEI), polyaminobismaleimide, methylpentene copolymer(TPX), crystalline polyester, and stereoregular polyethylene.

Further, said thermoplastic resin is made from one or more kind(s) of plastic(s) selected from a group of polystyrene, polyamide, and polypropylene.

Said rubber-like material is preferably styrenic elastomer.

Still further, a compatibility aid agent may be added to said polymer alloy.

Commonly, said core member(2) may be corrugated sheet, honeycomb material, or a honeycomb material having a grid structures or molded sheet forming a number of projections(4).

Still further, said covering member(3) is sometimes made of a porous material, and/or made heat resistant material, and said heat resistant material is preferably made from carbon fiber and/or aramid fiber sheet.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig.1 is a perspective view of an engineering plastic cardboard to be used as a sound absorbing material.

Fig.2 is an A-A sectional view of the sound absorbing material shown in Fig.1.

Fig.3 is a perspective view of a molded sheet.

Fig.4 is a B-B sectional view of the molded sheet shown in Fig.3.

Fig.5 is a perspective view of a core member consisting of a corrugated sheet.

Fig.6 shows a perspective view of a core member consisting of a honeycomb body.

Fig.7 is a perspective view of a core member consisting of a honeycomb body including a grid structure.

Fig.8 is a perspective view of a premolded sheet.

Fig.9 is a C-C sectional view of the premolded sheet shown in Fig.8.

Fig.10 is a partial sectional view of a premolded sheet from another example.

Fig.11 is a partial sectional view of a premolded sheet from still another example.

Fig.12 is a perspective view of a premolded sheet from another example.

Fig.13 is a perspective view of a premolded sheet from another example.

Fig.14 is a partial sectional view of a cardboard comprising a core member consisting of a corrugated sheet.

CLAIMS

1. (Amended) An engineering plastic cardboard, consisting of a core member and covering member(s) covering one or both side(s) of said core member, wherein at least said core member is made of crystalline polyester, stereoregular polyethylene, a polymer alloy of engineering plastic and thermoplastic resin, or a polymer alloy of said engineering plastic, said thermoplastic resin, and a rubber-like material, said engineering plastic being of one or more kinds(s) of engineering plastic(s) selected from a group of polyamide(PA), polyester(PE), polyacetal(POM), polycarbonate(PC), polyethylene terephthalate(PET), polybutylene terephthalate(PBT), polysulfone(PSF), polyethersulfone(PES), polyphenylene ether(PPE), modified polyphenylene ether(Modified PPE), polyphenylene sulfide(PPS), polyarylate(PAR), polyether-etherketone(PEEK), polyamideimide(PAI), polyimide(PI), polyetherimide(PEI), polyaminobismaleimide, methylpentene copolymer(TPX), crystalline polyester, and stereoregular polyethylene
2. (Amended) An engineering plastic cardboard in accordance with Claim 1, wherein said thermoplastic resin is of one or more kind(s) of thermoplastic resin(s) selected from a group of polystyrene, polyamide and polypropylene
3. (Amended) An engineering plastic cardboard in accordance with Claim 1 or Claim 2, wherein said rubber like material is a styrenic elastomer
4. (Amended) An engineering plastic cardboard in accordance with Claims 1, 2 and 3, wherein a compatibility aid agent is further added to said polymer alloy
5. (Amended) An engineering plastic cardboard in accordance with any of Claims 1 to 4, wherein said core member is a corrugated sheet
6. (Amended) An engineering plastic cardboard in accordance with any of Claims 1 to 4, wherein said core member is a honeycomb material
7. (Amended) An engineering plastic cardboard in accordance with any of Claims 1 to 4, wherein said core member is a molded sheet forming a number of projections
8. (Amended) An engineering plastic cardboard in accordance with any of Claims 1 to 4, wherein said core member has a honeycomb body having grid structure

9. (Amended) An engineering plastic cardboard in accordance with any of Claims 1 to 8, wherein said covering member is a porous material
10. (Amended) An engineering plastic cardboard in accordance with any of Claims 1 to 9, wherein said covering member is made of a heat resistant material
11. (Amended) An engineering plastic cardboard in accordance with Claim 10, wherein said heat resistant material is a carbon fiber and/or aramid fiber
12. (canceled)